

CLAIMS

1. A process for producing 4,4'-  
dihydroxydiphenylsulfone of high purity comprising the  
steps of:

- 5               subjecting phenol in combination with a  
sulfonating agent or phenolsulfonic acid to a dehydration  
reaction in the presence of an aromatic nonpolar solvent  
while suspending the resulting dihydroxydiphenylsulfone  
therein;
- 10              mixing the resulting reaction suspension with a  
polar solvent to at least partially dissolve the  
dihydroxydiphenylsulfone; and
- precipitating dissolved 4,4'-  
dihydroxydiphenylsulfone.

- 15              2. A process for producing 4,4'-  
dihydroxydiphenylsulfone of high purity comprising the  
steps of:
- subjecting phenol in combination with a  
sulfonating agent or phenolsulfonic acid to a dehydration
- 20              reaction in the presence of an aromatic nonpolar solvent  
while suspending the resulting dihydroxydiphenylsulfone  
therein;
- mixing the resulting reaction suspension with a  
polar solvent to at least partially dissolve the
- 25              dihydroxydiphenylsulfone;

primarily precipitating dissolved 4,4'-  
dihydroxydiphenylsulfone;

isolating the resulting 4,4'-  
dihydroxydiphenylsulfone by filtration or decantation;

5           distilling off the solvents contained in the  
liquid obtained after the isolation of the 4,4'-  
dihydroxydiphenylsulfone to produce a suspension or  
distillation residue;

          at least partially dissolving solids contained  
10 in the suspension or the residue in a mixed solvent of a  
polar solvent and a nonpolar solvent; and

          secondarily precipitating 4,4'-  
dihydroxydiphenylsulfone.

          3. A process for producing 4,4'-  
15 dihydroxydiphenylsulfone of high purity according to Claim  
1 or 2, wherein the dehydration reaction between phenol  
and a sulfonating agent or phenolsulfonic acid is carried  
out in the presence of an acid catalyst.

          4. A process for producing 4,4'-  
20 dihydroxydiphenylsulfone of high purity according to any  
one of Claims 1 to 3, wherein the aromatic nonpolar  
solvent is mesitylene.

          5. A process for producing 4,4'-  
dihydroxydiphenylsulfone of high purity according to any  
25 one of Claims 1 to 4, wherein the polar solvent is

selected from the group consisting of C<sub>4-15</sub> higher alcohols, polyols, and phenols.

6. A process for producing 4,4'-  
dihydroxydiphenylsulfone of high purity according to any  
5 one of Claims 1 to 5, wherein the polar solvent is phenol.

7. A process for producing 4,4'-  
dihydroxydiphenylsulfone of high purity according to any  
one of Claims 1 to 6, wherein the reaction suspension and  
the polar solvent are mixed while heating under pressure  
10 to at least partially dissolve dihydroxydiphenylsulfone.

8. A process for producing 4,4'-  
dihydroxydiphenylsulfone of high purity according to any  
one of Claims 2 to 7, wherein the solids contained in the  
suspension or the residue is at least partially dissolved  
15 in a mixed solvent of a polar solvent and a nonpolar  
solvent while heating under pressure.

9. A process for producing 4,4'-  
dihydroxydiphenylsulfone of high purity according to any  
one of Claims 2 to 8, wherein before or after the  
20 dehydration reaction between phenol and a sulfonating  
agent or phenolsulfonic acid, 4,4'-  
dihydroxydiphenylsulfone obtained by secondary  
precipitation is introduced into the reaction system.

10. A process for producing 4,4'-  
25 dihydroxydiphenylsulfone of high purity according to Claim

2, wherein the temperature is maintained at the isomerization temperature or higher even after the solvents contained in the liquid obtained after the isolation of the primarily precipitated 4,4'-  
5 dihydroxydiphenylsulfone by filtration or decantation are distilled off to produce a suspension or distillation residue.